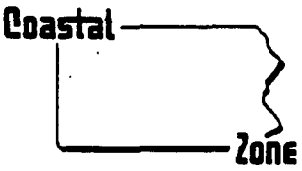
ASSESSMENT
OF THE
PENNSYLVANIA
COASTAL ZONE MANAGEMENT PROGRAM

Performed Under The
Coastal Zone Enhancement Grants Program
Section 309
Coastal Zone Management Act

January 15, 1992



Prepared By
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Bureau of Water Resources Management
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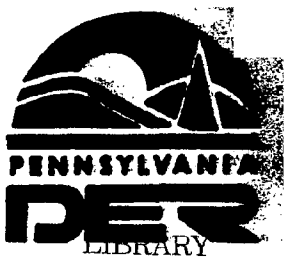
This Assessment of the Pennsylvania Coastal Zone Management Program was funded in part by a grant from the Office of Ocean and Coastal Resource Management, National Oceanic and Atmospheric Administration, through the Coastal Zone Management Act of 1972, as amended.



SECTION 309 ENHANCEMENT AREAS

Overview

This assessment of Pennsylvania's Coastal Zone Management Program (CZM) was conducted in response to a new federal program. Section 309 of the Coastal Zone Management Act, as amended in 1990, establishes a new voluntary Coastal Zone Enhancement Grants Program that encourages states to develop program changes in one or more of eight coastal zone enhancement areas:

- coastal wetlands
- coastal hazards
- public access
- marine debris
- cumulative and secondary impacts
- special area management planning
- ocean resources
- energy and government facility siting and activities

Under the grant program, states that improve their programs to meet goals in one or more of the enhancement areas are eligible for additional federal funding.

As required by the new program, CZM conducted an assessment of the eight enhancement areas in the Lake Erie and Delaware Estuary coastal zones. This assessment afforded CZM the opportunity to step back and reevaluate the program's management direction for the enhancement areas. Included in this document is the following information on those areas:

- current status
- current state, federal, and local efforts
- existing and potential problems
- CZM's direction

An important element of the assessment is public comment. CZM conducted two surveys of the coastal public, as well as state, federal and local government agencies. The surveys offered the public an opportunity to help identify the key enhancement areas and to indicate whether they agree with the assessment and CZM's direction. In addition, CZM held a public meeting in each coastal zone.

Listed below is a summary of the assessment findings for seven of the enhancement areas. The ocean resources enhancement area does not apply to Pennsylvania and is not included in the assessment.

Based on the assessments, CZM does not plan to make any program changes for the following two enhancement areas:

- Marine Debris

  Marine debris is controlled and reduced through existing state, federal, and local legislation and efforts.

However, CZM will continue its efforts to educate the public on the problem of marine debris.

- Energy and Government Facility Siting and Activities

  This enhancement area is being addressed by existing CZM policies and state coordination and review mechanisms.

The following five enhancement areas have been identified as priority issues for Pennsylvania and will result in CZM program changes:

- Coastal Wetlands

  Wetland resources are lost to development activities because of incomplete review procedures at the local and county levels. CZM's enforceable policy on wetlands may have to be revised and/or interagency agreements created to establish a mechanism for this additional review.

- Coastal Hazards

  Major concerns in the Lake Erie Coastal Zone are unrestricted bluff development and improper structure siting. Options CZM may pursue include amending the Bluff Recession and Setback Act and improving bluff recession monitoring techniques.

- Public Access

  CZM was providing public access opportunities with limited federal funding. However, the need for access is so great that CZM, as facilitator, must direct the program's limited funds to leverage greater state and local involvement.

- Cumulative and Secondary Impacts

  Wise land-use management is the key to minimizing cumulative and secondary impacts on coastal resources. In addition to providing funds for local planning and zoning updates, CZM will explore means to better ensure that critical areas are protected by local land-use decision making.

- Special Area Management Planning

  CZM program changes may include a new policy on dredge disposal, new regulations governing development of marinas/pump-out stations in Presque Isle Bay, and regulations limiting the number of power boats in Presque Isle Bay.

Listed below is a general task schedule, by federal grant year, for the five priority enhancement areas. This schedule is based on a best guess of possible funding, consultant involvement and staff availability. These priority task bullets are generated from the "Direction" section under each enhancement area.

GY1991

GAPC study - Cumulative and Secondary Impacts (CSI)

Identify areas subject to cumulative and secondary impacts and coastal development - CSI

Inventory land uses on bluff face - Coastal Hazards - Unrestricted Bluff Development (UBD)

GY1992

Review Act 247 responsibilities (county and local) - Wetlands

Review Chapter 102 responsibilities for county conservation districts and local governments - Wetlands

Determine need for MOUs for coordination with CZM, implement program changes, and provide mapping, mylar, and other tools - Wetlands

Research for acceptable ways to use bluff face areas - Coastal Hazards - UBD

Improve mechanisms for oversight of the local administration of the Bluff Recession and Setback Act - Coastal Hazards - Improper Structure Siting (ISS)

Inventory access opportunities (resources and mechanisms) that can be used to provide access in coastal zones - Public Access

Conduct meetings to determine parameters (scope for RFP) for boat capacity/impact study for Presque Isle Bay - SAMPS - Presque Isle (PI)

Develop RFP to retain consultant to conduct boat capacity/impact study for Presque Isle Bay - SAMPS - PI

GY1993

Develop educational programs and materials on proper bluff development techniques directed towards bluff property owners - Coastal Hazards - UBD

Monitor additional control points and amend the base report Erosion and Flooding, Erie County, and possibly the Bluff Recession and Setback Act - Coastal Hazards - ISS

Meet with inter/intra agencies (coordination) to determine what resources and mechanisms (opportunities) can be implemented - Public Access

Identify means to have local governments protect areas from impacts (impacts from coastal development) via land use management authorities (existing and new ones) - CSI

Implement program changes - CSI

Conduct Presque Isle Bay boat capacity/impact study - SAMPS - PI

GY1994

Assess the effectiveness of the educational program and materials - Coastal Hazards - UBD

Determine what options (opportunities) to pursue - Public Access

Determine all possible dredge disposal sites - SAMPS - DD

Meet with pertinent property owners, regulatory agencies, etc., - SAMPS - DD

Determine options for acquiring long-range solutions, i.e., acquisition, easements, etc. - SAMPS - DD

FY1995

Amend coastal hazards policy (program change) - Coastal Hazards - ISS

Develop necessary actions/policies/authorities to implement program changes - Public Access

Implement selected options and make necessary program changes - SAMPS - DD

Devise strategy and implement program changes for Presque Isle Bay boat capacity/impact study - SAMPS - PI

Amend Bluff Recession and Setback Act - Coastal Hazards - UBD

Wetlands Assessment

Legislative Objective

5309(a)(1) Protection, restoration, or enhancement of existing coastal wetland base or creation of new coastal wetlands.

Assessment Characterization

Characterize the status of coastal wetlands; their extent (by type e.g., tidal and nontidal), trends (rate of loss/gain), and threats (direct and indirect) to those wetlands.

Introduction

The Coastal Zone Management Program (CZM) takes the preservation and protection of wetlands within its coastal zone boundaries very seriously. CZM has taken innovative approaches, beyond the normal coordination/review processes, to ensure all coastal wetlands are identified, monitored, and vigorously protected or restored if damaged. This assessment gives CZM the opportunity to step back and examine the effectiveness of its wetlands protection program.

Delaware Estuary Coastal Zone (DECZ)

The DECZ has 1,640 acres of wetlands. Most (82%) of the wetlands are palustrine wetlands (see Attachment A) which total 1,343 acres; the remaining wetlands are riverine tidal wetlands. Nine general types of palustrine wetlands are identified that can be classified into two broad groups by water regime modifiers: tidal and nontidal wetlands. Two hundred and seventeen acres are tidal wetlands and 1,128 acres are nontidal wetlands. The largest number of palustrine wetlands are represented by nontidal emergent and nontidal unconsolidated bottom wetlands.

Between the mid-1970s and 1986, a net loss of 184 acres of palustrine wetlands took place within the DECZ. During this period, there was no net change in riverine tidal wetlands.

Palustrine nontidal emergent wetlands experienced the greatest net losses (129 acres), amounting to a 22 percent loss. The causes of this loss were varied, but most of the loss was attributed to sewage treatment plant facilities, dredged material disposal, and highway construction (see chart 1). Other causes of emergent wetland loss were industrial and commercial development and unknown activities.

A net loss of 36 acres of freshwater ponds (palustrine unconsolidated bottom) was also significant. This represents a seven percent loss. Industrial developments, dredged material disposal, sewage treatment plant facilities, highway construction, and commercial developments were major causes of pond loss.

The wetlands of the DECZ appear to be under constant and sometimes intense development pressures. Open land is scarce and valuable for a myriad of development projects, both private and public. Most of DECZ is comprised of permanently altered or disturbed land. Many of the remaining wetland areas are small and isolated. A majority of these are degraded to a monoculture (lacking diversity) and near ecological collapse. The few undisturbed and more diverse wetlands are good examples of the types of wetlands that once existed in this area and are again needed in the coastal zone.

Every existing wetland in the DECZ is accounted for in the coastal zone wetlands data base. The data base is a result of the wetland monitoring project that was developed and is updated by CZM. The information in this assessment is taken from the 1986 monitoring project. From the 1989 monitoring project, limited information is available. CZM determined from the 1989 field investigations that approximately 50 percent of the detected wetland losses were from unpermitted activities. These were activities undertaken without state or federal permits.

Persistent coordination with state and federal enforcement agencies, and recent joint wetland enforcement initiatives, have afforded the wetlands of the DECZ the highest management priority and level of protection of any group of wetlands in the Commonwealth of Pennsylvania. This process will hopefully mean a no net loss status of wetlands in the DECZ. Furthermore, with restoration of illegally taken areas, and mitigation for permitted loss sites and human-made gains (pond construction/dams), future wetland acreage should increase in the DECZ.

Lake Erie Coastal Zone (LECZ)

The LECZ has 9,974 acres of wetlands. Nearly two-thirds (6,295 acres) of this acreage is lacustrine wetland associated with the littoral zone (shallow water - less than 6.6 feet deep) of Lake Erie. Almost all (3,672 acres) of the remaining wetlands are palustrine wetlands.

Palustrine wetlands, although less abundant than the lacustrine wetlands, are more diverse. Nine general types of palustrine wetlands are identified. Of these, forested wetlands are most abundant, accounting for 76 percent (2,792 acres) of the palustrine wetlands. If this type is combined with the mixed forested wetland types, all forested wetlands represent 80 percent (2,939 acres) of the inland wetlands. Palustrine wetlands occupy about nine percent (3,672 acres) of the 63-square mile land area of the LECZ.

In general, only minor net changes occurred in the number of LECZ wetlands during the period mid-1970s to 1986. Small net losses of three wetland types (i.e., palustrine scrub-shrub wetlands, palustrine scrub-shrub/emergent wetlands, and lacustrine littoral unconsolidated bottom) have occurred in this period. In contrast, three types of palustrine wetlands experienced slight net gains, whereas, six other wetland types did not change.

Urbanization, mostly housing developments, caused 53 percent of the wetland losses and little of the wetland gains or changes in type (see chart 1). Similarly, agricultural activities were responsible for about 47 percent of the wetland losses, 90 percent of the changes in wetland type, and about 93 percent of the wetland gains. Largely by abandoning farming of one large area of wet soils, the net effect of agriculture on wetlands in the LECZ was an increase of 22.2 acres since the mid-1970s.

The wetlands of the LECZ do not appear to be subjected to intense pressures for development. In fact, based on current findings, if recent trends continue, CZM may expect increases in palustrine wetlands through pond construction in upland areas and abandoned farming of wet soils. This situation, coupled with strong enforcement of existing state and federal regulations, present a good outlook for the future of LECZ wetlands. The overall quality of wetlands is good with very few disturbed areas. Generally, these areas exhibit a high diversity in the types of plant and animal species. The functional value of the majority of these wetland areas is high and, therefore, will receive premium protection status from state and federal enforcement agencies.

For monitoring purposes, every existing wetland in the LECZ is accounted for in coastal zone wetlands data base as discussed previously.

It should be noted that even though these wetlands are more numerous and of higher quality than those in the DECZ, it is important to properly manage these areas to reach the long-term goal of no unpermitted loss of wetland habitat. The LECZ will eventually experience the development pressures that the DECZ now experiences. Measures should be taken to ensure these high quality wetlands remain intact for future generations.

Programmatic Objectives

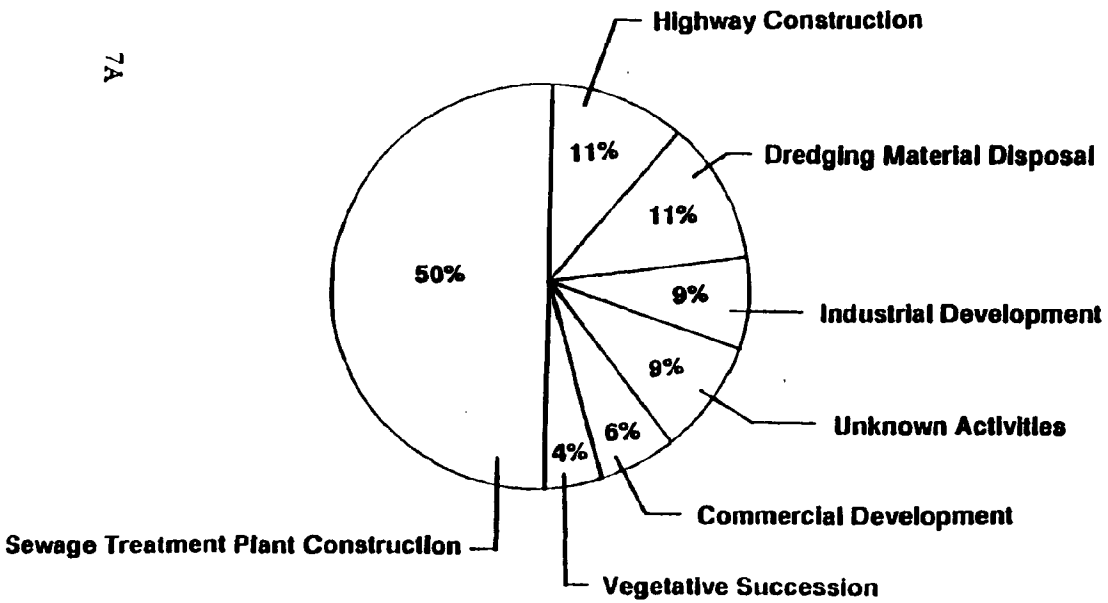
I. **Assess the protection and preservation of existing levels of wetlands as measured by acreage and functions from direct and indirect cumulative adverse impacts by developing or improving regulatory programs.**

State Authority

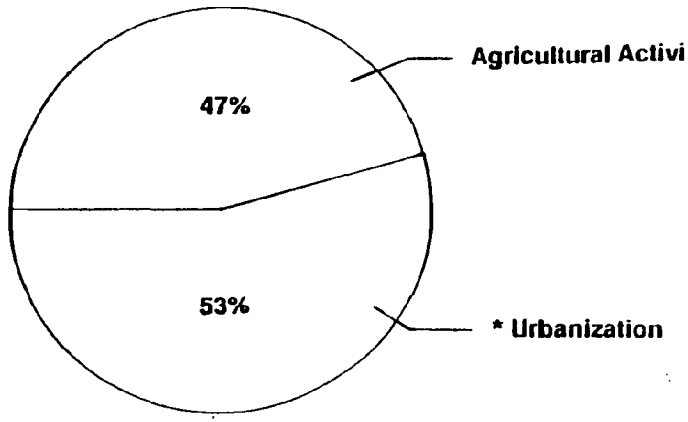
The authority to protect and preserve wetlands in Pennsylvania's coastal zones is the Dam Safety and Encroachments Act of November 26, 1978, and the implementing rules and regulations, PA Code, Title 25, Chapter 105. The act and regulations provide for environmental evaluation of permit applications for obstructions and encroachments in the regulated waters of the Commonwealth. All permit applications go through an environmental assessment process to determine the potential for environmental harm. In reviewing permit applications, it is the policy of the Department of Environmental Resources (DER) to encourage development that protects the natural condition of the watercourse or body of water (including wetlands).

ACTIVITIES CAUSING LOSSES OF PALUSTRINE WETLANDS BETWEEN MID-1970'S AND 1986

DELAWARE ESTUARY COASTAL ZONE



LAKE ERIE COASTAL ZONE



* Includes Housing, Commercial Development & Mining Activities

Amendments to the State Authority

In an effort to improve wetlands protection provided by the act and regulations discussed previously, DER has recently adopted amendments to the regulations. The amendments do the following:

Wetland Categories - DER believes that all wetlands are better protected through the division of all wetlands into two categories: exceptional value wetlands and all other wetlands. Although all wetlands are valuable and subject to the requirements of the new regulations, exceptional value wetlands are special wetlands having any one or more of the following functions or values:

(1) Wetlands which serve as habitat for fauna or flora listed as "threatened" or "endangered" under the federal Endangered Species Act of 1973; the Wild Resource Conservation Act, Act 170 of 1982; the Fish and Boat Code, P.L. 9996 of 1980; or the Game and Wildlife Code, P.L. 93 of 1987.

(2) Wetlands that are hydrologically connected to or located within one-half mile of wetlands identified under Clause (1) and that maintain the habitat of the threatened or endangered species within the wetland identified under Clause (1).

(3) Wetlands that are located in or along the floodplain of the reach of a wild trout stream or waters listed as exceptional value under PA Code, Title 25, Chapter 93 (relating to water quality standards), and the floodplain of all stream's tributaries thereto, or wetlands within the corridor of a water course or body of water that has been designated as a natural wild or scenic river in accordance with the federal Wild and Scenic Rivers Act of 1968, as amended; or designated as wild or scenic under the Pennsylvania Scenic Rivers Act, Act 283 of 1972, as amended by Act 110, May 7, 1982.

(4) Wetlands located along an existing public or private drinking water supply, including both surface water and groundwater sources, that maintain the quality and quantity of the drinking water supply.

(5) Wetlands located in areas designated by DER as "natural" or "wild" areas within state forests or park lands, wetlands located in areas designated as federal wilderness areas under the Wilderness Act of 1964, the Federal Eastern Wilderness Act of 1975, or wetlands located in areas designated national natural landmarks by the Secretary of the Interior under the Historic Sites Act of 1935.

Permitting of Structures and Activities in Wetlands - The new regulations set forth standards that must be met before DER will issue a PA Code, Title 25, Chapter 105 permit for projects in, along, across, or projecting into, or otherwise affecting, both exceptional value wetlands or other wetlands. These standards include various combinations of impacts on the environment, water dependency, the review of practicable alternatives, reduction of harm, and replacement of unavoidable impacts.

Wetlands Replacement - The new regulations require that any wetlands adversely impacted be replaced. Such replacement shall be determined in accordance with guidance provided in DER's manual "Design Criteria for Wetland Replacement." DER maintains that the establishment of a minimum ratio allows the department the latitude to require higher ratios for resources that are less easily replaced, such as forested wetlands. However, for structures or activities constructed without a permit, wetland replacement will be required at a ratio of 2:1 (replacement areas:affected areas) or greater.

Additionally, CZM ensures that wetlands lost due to permitted activities from within the coastal zones will be replaced within the coastal zones. This is necessary because it became apparent that off-site replacement of wetlands could occur outside CZM boundaries, and outside the protection of CZM. Worst case scenario would mean a progressive net loss of wetlands from within coastal boundaries to areas outside the coastal zones. The section of the amendments that addresses this issue reads:

> "Siting criteria - Replacement shall be located adjacent to the impacted wetland unless an alternative replacement site is approved by the Department. Alternative replacement sites will generally not be approved unless the replacement site is located within the same watershed as the wetland being replaced or within the designated boundaries of the Coastal Zone Management area where the loss occurs."

Cumulative Impacts - The way DER evaluates the cumulative impacts will remain the same. The difference with the new regulations is when the analysis occurs. Instead of being somewhat vague in its application and often overlooked, cumulative impact analysis is now a required step in the review of permit applications for the construction or substantial modification of water obstructions or encroachments that may impact wetlands.

Wetlands Protection at the Local Level

The state authority and new amendments, as outlined in the preceding section, adequately protect wetlands from a regulatory standpoint. The key to securing additional wetlands protection (nonregulatory) in Pennsylvania's coastal zones is at the local level. In many cases, an application for a local permit should trigger an application for a state permit. However, due to the deficiencies described below, wetland disturbances are occurring without the knowledge of the state. Taking certain steps at the local level could protect additional wetlands. By strengthening CZM's review role at the county and local level, permit activities affecting wetlands would be detected early and impacts to wetlands could be avoided. The following is a description of both the county and local government roles in reviewing permit activities that could impact wetlands.

Delaware Estuary Coastal Zone - The three planning commissions covering all the local governments in the DECZ are provided authority to review all applications for subdivision and land development activities, including activities affecting wetlands. Delaware and Bucks counties

are provided authority by the Pennsylvania Municipalities Planning Code, Act 247 of 1968, as amended by Act 170 of 1988, and Philadelphia County is provided authority by the 1951 Home Rule Charter. (Refer to the "Cumulative and Secondary Impacts" section for a complete discussion on Act 247 and the 1951 Home Rule Charter). In Delaware and Bucks Counties all permits are issued at the local level and only minor permits are issued without the county's review. In Philadelphia County, all permits go through county review.

In Delaware and Bucks counties, the county planning commissions have parallel review responsibilities with their respective local governments. Wetland review at the local level is not consistently practiced in either county. However, wetlands review is practiced at the county level, but it is still influenced by periodic staffing shortages. The county conservation districts in each county provide an additional level of review. This additional review is not consistent, but may, with appropriate agreements with local governments, provide a good source for wetland review. Major tools used to complete wetlands review are the National Wetlands Inventory (NWI) maps and county soil survey reports. In Bucks County, when the proposed development is located in or near wetlands, a notification letter is sent to the local government and to the developer stating the concern of wetlands impacts. Several limitations are evident in the process:

- CZM is not included in the notification process for any activity affecting wetlands within the boundaries of the coastal zones.

- The ability of the counties to effectively identify and monitor wetlands is limited by not having updated mapping and mylars (for reproduction) to accurately review activities that may affect wetlands.

- Generally, the counties do not do on-site inspections for any proposed subdivision and land development activities.

- Current practices by these counties do not require wetland delineations on final plans approved by local governments.

In Philadelphia County, the city and the county governments are the same. The primary review authority to detect wetlands impacts from subdivision and land development activities is the Philadelphia Planning Commission's Environmental Review Unit. All subdivision and land development activities must pass through the unit where appropriate in-office and on-site review is conducted. If potential wetland impacts are detected, a notification letter is sent to the developer. Again, the major tool in the office review of plans to detect potential wetland impacts is the NWI maps. The county does require wetland delineations on final plan submittal prior to plan approval. Several limitations are evident in this process:

- CZM is not included in the notification process for projects affecting wetlands within the coastal zone boundary.

- The Unit does not have updated NWI maps (and mylars).

- Appropriate field personnel are not trained in wetlands identification.

Lake Erie Coastal Zone - The Erie County Department of Planning (ECDP) is provided authority by the Pennsylvania Municipalities Planning Code, Act 247 of 1968, as amended by Act 170 of 1988 to review all applications made at the local level for subdivision plan approval. County review ensures that all regulated aspects are covered in the final plan proposal prior to plan approval. Minor permits (including building permits) are issued at the local level without county review. All local governments have municipal planning commissions which review subdivision plans to ensure consistency with local ordinances. At the same time, these plans are reviewed by the ECDP and the Erie County Department of Health (ECDH) (the latter only if an on-lot septic system is involved). The ECDP does wetlands review for all subdivision plans. The tool used in this review is NWI mapping. The ECDH will do site inspections for appropriate plans. Many wetlands will be detected at this phase due to "perking" limitations of hydric soils. Typically, hydric "wet" soils are not suitable for septic systems, and the land development permit will not be approved; therefore, the wetland will not be disturbed.

If wetlands exist in or near the area of the proposed subdivision plan, notification letters will be sent by both the ECDP and the ECDH back to the local government (and the developer) to be used as part of the overall plan review. Several limitation are evident in this process:

- Current practices do not require final development plans approved by the local governments to show wetlands delineation.

- Sewage enforcement officers doing the inspections do not have adequate training in wetlands identification.

- The ECDP and the ECDH do not include CZM in the wetland notification process for any activities affecting wetlands within the boundaries of the LECZ.

- Several local governments do not include wetlands review for proposed subdivision plans and individual building permits.

- Only one local government does on-site inspections for all proposed developments prior to plan approval or permit issuance.

- Limited by legal authority, local governments cannot deny building permits on the basis of wetland impacts.

- No local officials are trained in wetland identification.

Summary of Programmatic Objective

In summary, the existing state authority adequately provides for the protection and preservation of existing wetlands in Pennsylvania's coastal zones from a regulatory standpoint. The amendments to the authority provide additional protection for coastal wetlands. Non-regulatory local programs are the key to securing additional wetland protection and preservation in Pennsylvania's coastal zones. The local

programs, for the most part, take wetlands into consideration during their planning and permitting activities. Additional coordination/ review activities (including review by county conservation districts), updated mapping, wetland identification training, and on-site inspections during the permit review process are areas where the local programs need to improve.

II. Assess efforts to increase wetlands acreage and functions within formerly existing or degraded wetlands.

There is no state statute or local program in Pennsylvania that provides for the inventory of lost or degraded wetlands for increasing wetland acreage and functions. However, CZM has started recording historical wetlands data starting from the mid-1970s. All wetland information is stored in the coastal zone wetlands data base by location (latitude and longitude), size, and type. This information may be used to initiate restoration of lost/degraded wetland acreage, if CZM chooses to pursue this effort at a later date.

III. Assess the utilization of nonregulatory and innovative techniques to provide for the protection and acquisition of coastal wetlands.

Generally, there is no state or local program designed for the acquisition of coastal wetlands. As opportunities arise, CZM has and will continue to take advantage of certain federal programs providing for the acquisition of coastal wetlands. For example, in 1987 CZM submitted a list of wetlands to the U.S. Fish and Wildlife Service (FWS) for acquisition through the Emergency Wetland Resource Act of 1986, P.L. 99-645. The wetlands submitted by CZM were either threatened by development or supported endangered or threatened plant and animal species. As of this date none of these wetlands has been selected for acquisition.

Currently, CZM is reviewing a grant program through the FWS that would provide funding for wetland conservation projects. Section 305 of the Coastal Wetlands Planning, Protection and Restoration Act (Title III, P.L. 101-64) authorizes the director of the FWS to grant funds to coastal states to carry out coastal wetland conservation projects. Funding for this grant program is provided from a portion of the funds deposited in the Sport Fish Restoration Account. In FY 1992, an estimated $6 million will be available for grants to coastal states. Funds available under this state grant program are available for the acquisition of coastal lands or waters, and for the restoration, management, or enhancement of coastal wetlands ecosystems on a competitive basis with all coastal states.

IV. Assess Development and Improvement of Artificial Wetlands Creation Programs as the Lowest Priority.

There is no state statute or local program to provide for the development and improvement of artificial wetlands creation programs. However, DER has developed a guidance manual for the replacement of adversely impacted wetlands (the creation of artificial wetlands) titled, "Design Criteria for Wetland Replacement." These guidelines were part of the new amendments to the Dam Safety and Waterway

Management Rules and Regulations (PA Code, Title 25, Chapter 105) but were removed from the final draft version. DER believes that wetlands replacement is an evolving science based on the latest technologies. The inclusion of these guidelines in the regulations would not allow DER to review and accept new and innovative designs, and utilization of best available technology. Accordingly, the "Design Criteria for Wetland Replacement" manual is only referenced in the regulations.

Public Survey Responses

Out of 84 returned surveys from CZM's initial public response survey of the DECZ, 64 percent (54 respondents) thought this issue important enough to comment. Ninety-four percent (51 of the 54) thought this issue to be a high priority for future CZM funding. All but six respondents favored the protection, restoration, enhancement, and creation of coastal wetlands. The other six respondents favored protection, restoration, and enhancement; but objected to the creation of coastal wetlands.

Out of 108 returned surveys from CZM's initial public response survey of the LECZ, 47 percent (51 out of 108 respondents) thought this issue important enough to comment. Eighty-nine percent (45 out of 51 respondents) thought this issue to be a high priority for future CZM funding. All but nine respondents favored the protection, restoration, enhancement, and creation of coastal wetlands. The other nine favored protection, restoration, and enhancement; but objected to the creation of coastal wetlands.

Direction

Local, and to a lesser degree, county governments in Pennsylvania's coastal zones will be required or encouraged to adopt additional coordination measures to provide CZM with the opportunity to review plans for activities that may impact wetlands in the coastal zones. This review will assure no wetland resources are lost to development activities because of incomplete review procedures at the local and county levels. To accomplish this task, CZM's enforceable policy on wetlands may have to be revised and/or interagency agreements may be needed between CZM and each local and county government and possibly the county conservation districts to establish a mechanism for this additional review. The Pennsylvania Municipalities Planning Code, Act 247; and Pennsylvania Code, Title 25, Chapter 102 (erosion and sedimentation control) will be reviewed to determine the review and coordination responsibilities of the local and county level governments. CZM will also provide the necessary tools to carry out proper wetlands review, i.e., mapping, mylars, and training.

WETLAND TERMINOLOGY

PALUSTRINE - Freshwater habitat (e.g., marshes, bogs, swamps, and small shallow ponds)

Tidal - Continuously submerged or frequently flooded by tides.

Nontidal - Not influenced by tide waters.

Emergent - Wetlands dominated by erect, rooted, herbaceous vegetation.

Unconsolidated Bottom - Generally, permanently flooded open water areas with bottom substrates consisting of at least 25% particles smaller than stones and less than 30% vegetation cover.

Forested - Wetlands dominated by wood vegetation 20 feet (6m) or taller.

Scrub-shrub - Wetlands dominated by wood vegetation less than 20 feet (6m) tall.

LACUSTRINE - Freshwater and deepwater habitats (e.g., lakes, reservoirs, and large ponds).

Littoral - Wetlands extending from the lake shore to a depth of 6.6 feet below low water.

RIVERINE - Freshwater and deepwater habitats (e.g., rivers and streams).

Tidal - Continuously submerged or frequently flooded by tides.

Coastal Hazards Assessment

Legislative Objective

5309(a)(2) Preventing or significantly reducing threats to life and destruction of property by eliminating development and redevelopment in high hazard areas, managing development in other hazard areas, and anticipating and managing the effects of potential sea and Great Lakes level rise.

Assessment Characterization

Characterize the extent to which the coastal zone is at risk rom the following coastal hazards: hurricanes, flooding, storm surge, episodic and chronic erosion, sea and Great Lakes level rise, subsidence, earthquakes, tsunamis, and other significant coastal hazards.

Introduction

The coastal hazards addressed in the Delaware Estuary coastal zone will be flooding and sea level rise. The coastal hazards in the Lake Erie coastal zone will be fluctuating lake levels, shoreline erosion, and bluff recession.

Lake Erie Coastal Zone (LECZ)

High lake levels affect the entire Lake Erie shoreline. The result of high lake levels is beach inundation, severe beach erosion, flooding of low lying areas, and undercutting of bluff areas that do not have a bedrock exposure. High lake level periods are especially damaging when combined with lake storms. Without exposed beaches, wave action reaches the back beach and lower bluff areas (without the bedrock), and unconsolidated bluff material is easily eroded. Extended periods of bluff erosion will destabilize the bluff and result in bluff recession.

Low lake levels pose no threat to shoreline/bluff stability, but may require lake access facilities to resort to or increase the frequency of dredging to maintain open access for lakebound watercraft.

The entire Pennsylvania shoreline of Lake Erie is subject to shoreline erosion, but some portions are more susceptible than others. Due to the "harbor effect" of Presque Isle Peninsula, the shoreline inside Presque Isle Bay is not subject to much shoreline erosion. Outside the bay, shoreline areas are susceptible to direct wave attack and, therefore, much more shoreline erosion. The shoreline with thick bedrock exposure (approximately one-quarter of the Pennsylvania shoreline) usually has no or little beach material. As wave action strikes the bedrock, wave energies are driven down into the loose sand material on the lake bottom. The sand is pushed away from the bedrock and moved offshore and downdrift in littoral currents. Shoreline erosion is an active and constant process in these areas. Due to erosion and high lake levels, beach material rarely has a chance to deposit and form a beach in front of areas with bedrock exposure.

The areas with unconsolidated material at the base tend to support the deposition of beach material along the shoreline. Shoreline erosion is constant in these areas, but as material is removed by wave action, additional material is placed back on the beach from updrift beaches; this is called the littoral drift process. As long as this process is not interrupted, beaches will be maintained naturally.

Seiches (temporary wind-driven lake level rise), severe storms, and fluctuating lake levels (high lake levels) allow waves that normally break on the shoreline to reach the back beach and lower bluff area. The wave action erodes the beaches and removes substantial amounts of bluff material and eventually initiates bluff instability.

All of the bluff areas overlooking Pennsylvania's portion of Lake Erie, except for those areas inside Presque Isle Bay, are receding. Bluff recession is not a factor inside the bay because of the lack of significant shoreline erosion - a major cause of bluff recession. Some areas are receding quicker than others, but they all exhibit signs of active bluff recession. Approximately 180 residential structures at or near the bluff crest are threatened with collapse into the lake from active bluff recession.

There are several causes of bluff recession; the primary cause is wave damage at the base. Removal of bluff material at the base via the wave damage causes the bluff face to shift downward which results in a net loss at the bluff crest. Other factors that accelerate bluff recession are heavy groundwater flows, wind and surface erosion, and poor land-management practices (i.e., devegetation of the bluff face, unrestricted development, and construction activities on the bluff face).

Delaware Estuary Coastal Zone (DECZ)

Almost the entire DECZ, with exceptions around Neshaminy Creek and several small areas between Tullytown and Morrisville, Bucks County, is protected from flood waters by an elaborate system of bulkheads, levees, and other structures. Even the exception areas are riddled with a maze of artificial birms from old flood protection and dredge disposal activities. These structures have been built over many years in an effort to expand unusable land out into the river and to elevate the river shoreline above the limit of flood waters. At this time, flooding, except for local stream flooding, is not viewed as an active hazard.

Shoreline erosion, as a result of flowing river water, is not considered a hazard in the DECZ. Some areas may experience periodic erosion, but overall, the majority of shoreline is either artificially stabilized or wooded to the water's edge.

The sea level has risen 30 cm (1') in the last century and as of 1986, the National Academy of Sciences and the Environmental Protection Agency suspect a rise of 60 to 150 cm (2-5') over the next century. A rise of 30 cm would impact coastal erosion, flooding, and salt water intrusion. The most likely of the three impacts would be salt water intrusion. Salt water intrusion will affect the public drinking water supplies of cities and municipalities in tidal areas. It will affect

recharge of aquifers in tidal areas and groundwater supplies would become increasingly salty. During drought periods, it is feared the salt intrusions would reach the upper estuary. Even shipping and industry that use the river may experience operational and maintenance problems due to the salt water. Some ecological impacts would be expansion of the increased salinity zone that would allow predators and competitors to negatively effect native oyster beds. In the same light, increased salinity would promote an up estuary advance of marine and estuarine species and the retreat of freshwater species. Furthermore, sea level rise would drown most of the wetlands along the estuary that are backed by bulkheads, levees, and other structures. Loss of these wetlands would increase pollution loading into the estuary.

Other nationally known hazards which do not pose a threat to either the LECZ or DECZ are hurricanes, earthquakes, and tsunamis. These hazards, therefore, will not be addressed in this characterization/assessment.

Programmatic Objectives

At this time, the Coastal Zone Management Program (CZM) does not feel the coastal hazards associated with the DECZ pose either current or significant enough problems to warrant addressing in this assessment paper. Therefore, only the coastal hazards in the LECZ will be assessed.

I. Assess directing future public and private development and redevelopment away from hazardous areas, including the high hazard areas delineated as FEMA V-zones and areas vulnerable to inundation from sea and Great Lake level rise.

State authority: Bluff Recession and Setback Act

The primary management and enforcement authority to manage and restrict development in the bluff recession hazard areas along the bluff overlooking Lake Erie is the Bluff Recession and Setback Act of 1980 (BRSA). The BRSA and implementing regulations (PA Code, Title 25, Chapter 85) require municipalities to develop, adopt, and administer bluff setback ordinances. These ordinances restrict new development from bluff areas and limit improvements of existing structures within the minimum bluff setback distance. However, the law only restricts development from the bluff crest landward. The Commonwealth has no authority to regulate structures placed lakeward of the bluff crest.

Recession rates: Minimum bluff setback distances are determined by multiplying the rate of bluff recession (feet per year) by the appropriate life span of the structure (residential, commercial, industrial). The life span of structures is 50 years for residential homes, 75 years for commercial structures, and 100 years for industrial structures.

The rate of bluff recession is determined for each municipality from measurements taken from control points located along the bluffs. The control points consist of established referenced features which are surveyed, recorded, and monitored on an approximate five-year

frequency. As control points are lost to bluff recession, new points are established in the same area. Currently, CZM monitors 146 control points which are set up on a one-half kilometer grid.

Generally, the data generated from the control points reflect realistic recession rates. However, recent CZM involvement in the National Flood Insurance Program (NFIP), which involves moving residential structures landward of the bluff crest using bluff recession rate data to determine a safe distance, has alerted CZM to possible inaccuracies in the recession rate data. The cause of these possible inaccuracies is incomplete monitoring of bluff recession. Since the recession rate data is determined for each municipality by averaging the measurements from all the control points along their section of bluff, the number of control points and where they are located could greatly influence the average recession rate.

EXAMPLE: If the majority of control points for a municipality happen to be located in stable or stabilizing sections of bluff, the average recession rate will be low, when actually the recession rate may be a lot higher. Incomplete monitoring of bluff recession due to a limited number of control points may cause inaccuracies in the recession rate data. Inaccurate recession rate data may affect how new residences are located via the BRSA and existing residences are relocated via the NFIP. With the limited number of control points in each municipality, this situation will occur in certain areas.

This system provides a tool to manage development in municipalities experiencing coastal hazards. However, not enough resources are available to conduct more detailed erosion rate studies. Additional studies would enable fine tuning of the rate of bluff recession and subsequent municipal bluff setback ordinances. This fine tuning would allow for maximization of protection that could be afforded under the BRSA and implementing regulations.

Technical assistance: CZM also provides guidance to municipalities on implementing their bluff setback ordinances. Many times this involves explaining complicated aspects of the BRSA and regulations in order to help them implement their ordinances. Written guidance is sometimes provided by CZM, but most guidance is done on site or by telephone. The effectiveness of the written or verbal guidance is usually short term.

Legal counsel: The legal counsel advising CZM on legal aspects/issues of the BRSA has changed five times within the last ten years. Each attorney tends to interpret certain aspects of the BRSA and regulations differently. As the interpretation changes, so does the guidance to the municipality. This change in direction often gets confusing to the municipal official. CZM needs to consolidate these legal interpretations into one file for easy reference. Without this source, the response time back to the municipalities from CZM is sometimes delayed. Municipalities, out of frustration or misinformation, tend to interpret their ordinances in a way inconsistent with the BRSA regulations and their own ordinances or other setback ordinances of neighboring municipalities. Furthermore, as municipal officials are replaced, the new officials must be educated on legal interpretations and the various complicated aspects of the BRSA/regulations and their own municipal

ordinance. Several training sessions have proven helpful in the past in informing and reinforcing technical aspects of the BRSA/regulations, locating the bluff line, measuring the bluff setback distance, and identification of erosional phenomena causing bluff recession.

Problems Affecting the Management of Coastal Hazards

The major problems affecting the management of coastal hazards in Pennsylvania's LECZ are unrestricted bluff development and improper structure siting.

Unrestricted Bluff Development. As mentioned previously, the BRSA/ regulations only regulate construction and improvement of existing structures landward of the bluff line. Any construction on the bluff face (area between the bluff crest and the lakeshore) is outside the regulatory authority of the BRSA. Unregulated activities on the bluff face range from construction of residential dwellings, roads, and stairways to devegetation of forested areas. These activities have negative destabilizing effects on the bluff and can initiate or accelerate bluff recession. Even though these activities are not currently occurring at a high rate, CZM strongly feels, as the bluff areas become more populated, the unregulated bluff face will experience an increasing use by a population wanting access to the lake.

Improper Structure Siting. The major factors causing improper structure siting along the bluffs of Lake Erie are incomplete monitoring of bluff recession (which may result in inaccurate erosion rate data), inconsistent local official decision making, and lack of a single file source of all legal interpretations of the BRSA for both CZM and municipal reference. These factors can cause structures regulated by the BRSA to be placed within the bluff recession hazard area in a way that is generally inconsistent with the intention of the act.

Summary of Programmatic Objective

Overall, the BRSA is an effective tool in directing development and redevelopment away from receding bluff areas. Nevertheless, the scope of this authority does not extend to the adjacent areas (areas lakeward of the bluff crest). These areas are affected by bluff recession and should be covered by the BRSA (or a new statute). Furthermore, incomplete monitoring of bluff recession may result in inaccurate recession rate data and improper structure siting.

II. Assess the preservation and restoration of the protective functions of natural shoreline features such as beaches, dunes, and wetlands.

The majority of naturally accreted shoreline in the LECZ can be characterized as a narrow strip of sand mixed with gravel and flat shingle rocks. The beach slope is relatively steep and usually backed by high bluffs composed of unconsolidated material and covered with a thin veneer of vegetation to the bluff crest. These beaches do act as the first line of defense against wave damage. For various reasons, some beaches are more susceptible to wave damage than others. Where there are residential structures nearby, unstable beaches are protected with beach stabilization projects, i.e., groins and revetments. Groins

will trap sand to create a beach in front of the section needing protection. Revetments armor the base of the bluff against wave attack and generally do not facilitate the building of beaches. Both of these types of shoreline stabilization structures are permitted by the Department of Environmental Resources (DER) as acceptable ways to stabilize the shoreline and lower bluff areas. A certain degree of shoreline erosion is associated with each structure type. However, where conditions make it necessary, human-made structures can help to preserve and restore the natural shoreline.

CZM does not, however, totally endorse the introduction of these structures, especially groins, along a natural shoreline free of shoreline stabilization structures. A groin placed along a groin-free shoreline will likely cause adjacent downdrift property owners to place additional groins along the shoreline to counteract the negative erosive effects of the initial groin. Therefore, CZM understands and accepts both the positive and negative aspects of using shoreline stabilization structures. CZM attempts to limit its use only to situations where no other feasible alternatives exist for preserving and restoring the protective functions of the natural shoreline.

The only large expanse of wide beaches in the LECZ is Presque Isle State Park. This park combines the protective features of beaches, dunes, and wetlands (the latter not exposed to direct wave action). The beaches in this park have been seriously eroded over the years. The US Army Corps of Engineers (COE) and the DER have replenished these beaches for many years. In an effort to end this cycle, COE and DER are building a series of 58 large offshore rubble mound breakwaters to stabilize the portion of Presque Isle State Park exposed to direct wave attack. Apparently when this project is complete, the beaches of Presque Isle State Park will be stabilized and only minor replenishment and maintenance of the breakwaters will be required.

Summary of Programmatic Objective

Until some other method is developed that does not have erosive side effects, CZM will continue to recommend the use of shoreline stabilization structures (when applicable) for preserving and restoring the protective functions of the natural shoreline.

III. Assess the prevention or minimization of threats to existing population and property from both episodic and chronic coastal hazards.

This objective is addressed in two ways. First, CZM provides technical assistance through the site analysis and recommendations (SAR) service to shoreline property owners experiencing the coastal hazards of bluff recession and shoreline erosion. This assistance program provides on-site meetings where up-to-date information is given to the property owners and recommendations are made on how to address erosional phenomena which includes both episodic and chronic coastal hazards. Over 500 individual property owners have been visited since the inception of this technical assistance program in 1981. Second, CZM has been approved by FEMA as a certification agency for the NFIP. In order to file a claim under the NFIP for structures threatened with collapse into the lake from erosion caused by high lake levels, the

structures must be certified by CZM. Once certified, the property owner can elect, if the claim is approved, to either demolish the structure or move it landward to an area safe from recession caused by high lake levels. To date, CZM has certified (or assisted in certifying) eight residential structures since 1989.

Summary of Programmatic Objective

Through the NFIP Certification Process and the SAR service, CZM is preventing or minimizing threats from both episodic and chronic coastal hazards.

Public Survey Responses

Out of 108 returned surveys from CZM's initial public response survey of the LECZ, 83 percent (90 of the 108 respondents) thought this issue important enough to comment. Ninety-eight percent (88 of the 90 respondents) thought this issue to be a high priority for future CZM funding. State initiated shoreline protection projects and low interest loans for shoreline/bluff stabilization projects were popular requests in these responses.

Out of 84 returned surveys from CZM's initial public response survey of the DECZ, 65 percent (55 of the 84 respondents) thought this issue important enough to comment. Ninety-eight percent (54 of the 55 respondents) thought this issue to be a high priority for future CZM funding. Twenty-two percent (12 of the 84 respondents) want all development to be restricted from floodprone and bluff recession prone areas. Since the issue of bluff recession is exclusive to the LECZ, this latter fact indicates that the inhabitants of the DECZ are interested in coastal issues beyond the boundaries of their coastal zone.

Direction

The major problems affecting the management of coastal hazards in the LECZ are unrestricted bluff development and improper structure siting. Options CZM may pursue include amending the BRSA, creation of a new statute or "networking" an existing statute not currently used as a CZM authority, amending the coastal hazards policy of the approved CZM Program, establishing additional control points to monitor bluff recession, improving bluff recession monitoring techniques, updating technical assistance by conducting research into new techniques of controlling bluff recession, and creating a new education program to deliver information to the public.

Public Access Assessment

Legislative Objective

5309(a)(3) Attaining increased opportunities for public access, taking into account current and future public access needs to coastal areas of recreational, historical, aesthetic, ecological, or cultural value.

Assessment characterization

Characterize the adequacy of existing public access sites, site improvements, and maintenance programs.

Introduction

The Commonwealth's coastal waters are diverse and unique (the only tidal and Great Lakes waters in the Commonwealth). Public access to these waters has been constrained by industrial development, private ownership, and natural barriers. When the Pennsylvania Coastal Zone Management Program (CZM) was approved in 1980, there was an overwhelming desire for public access in both coastal zones for fishing, swimming, boating, and sight-seeing.

Lake Erie Coastal Zone (LECZ)

The LECZ provides a natural water area with vast recreational potential. The lake attracts a significant influx of visitors to the Erie coast to use the outdoor recreation facilities. Nine public access sites in the 63-mile LECZ currently provide opportunities for such activities as swimming, fishing, boating, passive recreation (sight-seeing), etc.

Private land ownership is a major factor in limiting additional public access. Along the shores of Lake Erie, much of the land at the top of the bluffs suitable for passive recreation is controlled by private, residential owners. The few locations suitable for public access at the foot of the bluffs (usually at the mouth of tributary streams) are also privately owned and flat land is limited for developing the necessary facilities. Natural barriers such as bluffs further limit access to the lake. Additionally, certain areas have problems with water quality which limits water contact activities.

Delaware Estuary Coastal Zone (DECZ)

Fifteen public access sites in the 57 miles of the DECZ currently provide active and passive types of recreational opportunities such as: swimming, fishing, boating, passive recreation (sight-seeing), etc. Other sites exist; however, their potential for providing public access needs to be looked at more closely.

Much of the waterfront land is occupied by public utilities, manufacturing, warehousing and trucking, and rail or water transportation facilities. Since most of the waterfront is in private ownership and use, public access to the river is available at only a few points.

Even when access is available, potential conflicts between recreational, commercial, or industrial uses are present. In addition, water quality problems along the river from point and nonpoint sources limits some water contact activities.

Programmatic Objectives

I. Assess the improvement of public access through regulatory, statutory, and legal systems.

The provision of public access is addressed at both the state and local level. At the state level, the Commonwealth of Pennsylvania has statutory and legal mechanisms in place to provide public access. These mechanisms are primarily enabling legislation and memoranda of understanding (MOU). The MOU's that are significant to providing public access are interagency agreements between the Department of Environmental Resources (DER)/CZM and two other agencies: the Pennsylvania Fish Commission (PFC) and the Department of Community Affairs (DCA). There is no statutory authority which broadly mandates land acquisition or development for this purpose. However, there is statutory authority which address specifics concerning public right to access. These mechanisms are outlined below:

Open Space Lands, Act of January 19, 1968, P.L. (1967) 992, (32 P.S. Section 5001 et seq.)

> It is the purpose of this act to clarify and broaden the existing methods by which the Commonwealth may preserve land in, or acquire land for open space in and near, urban areas to meet needs for recreation, amenity, and conservation of natural resources.

Administrative Code of 1929, Act of April 9, 1929, P.L. 177, as amended (71 P.S. Sections 510-1 et seq.)

> This act provides authority to acquire land through purchase, gift, lease, or condemnation.

Fish Laws of 1959, Act of December 15, 1959, P.L. 1779, as amended, (30 P.S. Section 1 et seq.)

> This act is a comprehensive statute relating to fish and fishing in the Commonwealth. It provides the PFC with its authority to provide fishing and boating access.

Dam Safety and Waterway Management, PA Code, Title 25 55105.21(a)(4), 105.32, 105.34 (regulations).

> Allows for public access for navigation, fishing, and improvement of streams between high and low tide (public servitude zone) of navigable waters of the Commonwealth.

In addition to statutory and regulatory authority, DER also derives its authority from case law. According to case law, the public has no right or privilege for perpendicular access over privately held land to reach public trust lands or waters. However, the public is assured the right of lateral access along shorelines between the ordinary high and

low water lines and can gain access to this zone from the water or by access across or through public lands.

Although certain state agencies, such as DER and the PFC, have the authority to acquire land through condemnation for public access, this avenue is rarely used. Municipal governments also have the authority to condemn land for the public good such as health and safety and, in some instances, the provision of open space has been upheld as a legitimate use of this authority. However, because of likely court challenges, public ill will, and the requirement of providing compensation; this avenue is very rarely used by municipalities. Municipal governments can use zoning to require public access in future development, but cannot use it to require access in existing land uses.

While Pennsylvania's Statewide Comprehensive Outdoor Recreation Plan (SCORP) provides the basic guidance for public access for all of Pennsylvania, this document serves only as a guide for recreation in Pennsylvania and has no teeth or enforcement element. In addition, the basis of the SCORP needs/demand analysis applies to a much larger area then just Pennsylvania's coastal zones. CZM, therefore, has never felt comfortable in applying this information to determine demand for public access in the coastal zones.

At the local level, CZM has provided funds for local governments to update their zoning ordinances and comprehensive plans, and require that they look at public access as a component of the process. Although this has been somewhat successful in planning for public access in the coastal zone, the funds for public access implementation have been limited. Also, in many instances the local tax base relies on industrial or commercial revenues, thus diminishing the incentive for local governments to pursue public access opportunities.

CZM is limited in the use of federal consistency to require additional public access. Since CZM does not have enforcement policies covering public access, it has only been able to recommend or encourage that additional public access be provided via the federal consistency process.

To date, these legal, contractual, and procedural mechanisms have enabled CZM to provide additional public access opportunities in the coastal zones. CZM has never been restricted from fulfilling its public access policy, as written, because of the lack of mandated state statutory authority or any other legislation or administrative authority.

II. Assess the acquisition, improvement, and maintenance of public access sites to meet current and future demand through the use of innovative funding and acquisition techniques.

Traditionally, governments in both coastal zones have relied almost entirely on fee-simple purchase to provide recreational access areas. This technique has been considered the easiest and most acceptable for providing recreational opportunity. However, the scarcity of funds for both acquisition and continuing maintenance has led to the need for other techniques.

A unique approach to providing public access has occurred in Erie County. The PFC has leased state-owned lands, at the North East Access (Safe Harbor Marina), to a private developer. The private developer received a 25-year lease and is developing this public access area which will include: a marina with dry storage, restaurant, administration building, bait and tackle shop, unlimited free public launch, parking, etc. This is one of the first public/private partnerships in the state.

State agencies, as well as municipal governments, have utilized their authorities and resources to fulfill public access demand. CZM has used other state agencies' funds to augment DER-CZM funds for providing public access in both coastal zones. Some examples of these combined state and locally funded efforts that further exemplify innovative funding and acquisition methods are:

Commodore Barry Bridge Access: This major boating and fishing facility along the Delaware River, located in the city of Chester, Delaware County, was planned and constructed using funds from DER-CZM, PFC, DCA (Coastal Energy Impact Program, and Land and Water Conservation Fund), and local city monies. The land for this site was leased to the PFC by the Delaware River Port Authority under a long-term lease program. In turn, the City of Chester is responsible for the development and maintenance at the site.

Elk Creek Land Acquisition: This partnership effort used funds from DER-CZM, PFC, and Erie County to acquire land and appurtenances on the east bank of Elk Creek for the purpose of developing the Elk Creek area, Girard Township, Erie County, into a major public access and recreational facility along Lake Erie.

CZM monies have been used to match DCA, PFC, and other DER and municipal funding (and vice versa) in the provision of coastal public access. Additionally, CZM has provided funds to municipalities to develop comprehensive plans and zoning ordinances which are geared to addressing the provision of public access.

CZM has also provided local governments and project applicants with information on other funding sources pertinent to the provision of public access. These supplemental funding sources include other federal and state programs as well as private programs such as local trusts, foundations, etc. Also, in the future, CZM will look at less-than-fee-simple purchase (or easements) as a means of providing additional public access opportunities. In addition to saving money, this concept offers an alternative to public ownership and maintenance. CZM will continue in the pursuit of unique and innovative funding techniques.

III. Assess the development or enhancement of a Coastal Public Access Management Plan which takes into account the provision of public access to all users of coastal areas of recreational, historical, aesthetic, ecological, and cultural value.

CZM has funded several studies (i.e., Erie Waterfront Comprehensive Plan; Upper and Lower Schuylkill Waterfront District Plans; South, Central, and North Delaware Waterfront District Plans; etc.) which

identify/inventory coastal waterfront resources. Many of these studies are now over ten years old and somewhat outdated. They provide direction to townships, municipalities, and boroughs concerning their public access needs. However, a coordinated long-term approach to guide public access on a coastwide basis has never been developed. CZM has never taken a systematic look to determine if the demand for swimming, fishing, boating, and other types of public access are being met. CZM has relied on local steering committees and existing state programs (i.e., Bureau of State Parks, PFC, etc.) to direct the utilizations of CZM resources concerning public access within the constraints of the program's broad policies on access. Therefore, it is difficult to determine if the Commonwealth is using its funding resources effectively.

IV. Assess the minimization of potential adverse impacts of public access on coastal resources and private property rights through appropriate protection measures.

Adverse impacts to coastal resources is not a major problem in Pennsylvania's coastal zones. Many critical habitat areas are under federal (Tinicum marsh), state (Presque Isle), or local (Bristol Marsh Nature Preserve) protection and are regulated to prevent adverse impacts. Additionally, critical habitats such as wetlands are protected coastwide by state regulatory authority such as the Dam Safety and Encroachments Act of 1978. The one resource that has been identified as being subject to impact from public access (Presque Isle Bay) has been recommended as a Special Area Management Plan (see "Special Area Management Planning Assessment).

Private property owners denying public access to coastal areas has been a minor, but recurring problem. Lack of staff resources in the Bureau of Dams and Waterway Management has prevented swift resolution when problems have arisen. Therefore, DER has not been able to develop an effective response system to address this problem. In the early years of CZM, staff explored protecting the rights of private land owners who allowed public access. Due to shortage of staff and other priorities, this issue has never been fully developed. This issue will be further addressed in the Master Plan discussed below.

Public Survey Responses

CZM contacted other state agencies, CZM's regional coordinators (Delaware Valley Regional Planning Commission and Erie County Department of Planning), and the general public to solicit their views on the present state of public access in the coastal zones. Public response on this issue was very heavy. The response indicated that the public believes there is a need for more public access in the coastal zones. Comments were not specific, but alluded to the general need for more public access. Respondents stressed the need to have government ensure that public access will be increased and preserved in the coastal zones. The necessity of maintaining public access sites and the problems of vandalism were frequently mentioned. The majority of the respondents favored more fishing and boating access to Lake Erie.

The comments clearly indicate that this is an important issue and that more public access is needed. However, CZM could not use this infor-

mation to determine how much demand exists for what types of access and in what areas. Additionally, comments did not generally address what actions could be taken to provide additional public access in the coastal zones.

Direction

In the past, CZM has focused on providing public access opportunities in the coastal zones with limited federal funding. It is apparent from the input received that the need for access is so great that CZM as facilitator, must direct the Program's limited resources to leverage greater state and local involvement. Such actions will entail developing more specific CZM access policies, developing and expanding state authorities, and developing agreements with state and local agencies. This further identifies the responsibilities of other agencies with authorities to provide public access in the coastal zone. Furthermore, this defines how CZM can assist these agencies in fulfilling these responsibilities.

Areas where we will be exploring the expansion of our coastal public access program includes, but is not limited to the following:

1. Use of State Fish/Game Commission lands.
2. Explore the use of Public right-of-ways.
3. Coordination with federal, state, and local access providers.
4. Reevaluate existing GAPC designations; identify new ones, revise or eliminate old ones, etc.
5. Identify other sources of public and private funding that can be utilized for providing public access opportunities.
6. Explore the concept of limited liability (liability easements) to private property owners who allow public access on or through their property.

Marine Debris Assessment

Legislative Objective

5309(a)(4) Reducing marine debris entering the nation's coastal and ocean environment by managing uses and activities that contribute to the entry of such debris.

Assessment characterization

Identify the impact of marine debris on the coastal zone and the primary sources responsible.

Introduction

Marine debris is trash and garbage either in coastal waters or washed up on the shore. Types of debris include plastic and Styrofoam items (fast-food containers, bags, utensils, six-pack rings, and tampon applicators), beer and soda cans, fishing lines, and floatables released through municipal storm water-sewage systems.

Marine debris originates from two sources: ocean and land. Ocean-based debris comes from boats and ships (commercial and sport fishing, military, merchant, recreational, etc.), offshore oil and gas platforms, and illegal dumping. Land-based debris comes from industry, solid waste disposal sites, sewer systems, illegal dumping, and littering.

Delaware Estuary Coastal Zone (DECZ)

There is little data available on marine debris in the DECZ. The Coastal Zone Management Program's (CZM) findings are based on interviews, research, personal experience, and expertise. Based on interviews with the relevant agencies, both the US Army Corps of Engineers (COE) and the US Coast Guard (USCG) do not feel that marine debris is a problem in the estuary.

The Bucks County Department of Health, which enforces the county's water quality regulations, also indicated that marine debris is not a problem in the estuary because all county sewage plants have been upgraded and a major industry located along the estuary has closed. Furthermore, all of the small, inefficient sewage plants in Philadelphia and Delaware counties have been either upgraded or replaced with larger, more efficient plants.

Municipal officials in the DECZ agree that marine debris is more of a nuisance than a problem. Because of the tidal action of the estuary, marine debris such as cans and bottles, Styrofoam cups, tree branches, and paper become trapped by shoreline vegetation during ebb tide. The debris is eventually removed by the next high tide or heavy rain. At locations where marine debris borders on being a problem, controls are in place. For example, when debris is deposited on the beach at Neshaminy State Park due to tidal action, the nonswimmable beach is cleaned periodically by park staff and outside organizations such as the boy scouts. The shoreline of historic Pennsbury Manor, home of William Penn, is also a dumping ground because of the tide. The area

is cleaned weekly by maintenance workers because of the many tourists that come to the site. The debris is mostly land-based: Styrofoam cups, soda cans and bottles, paper, and tree branches.

The New Jersey Department of Environmental Protection, which oversees New Jersey's section of the estuary, has confirmed CZM's findings that marine debris is not a problem in the estuary.

Lake Erie Coastal Zone (LECZ)

Compared to the DECZ, more information exists on marine debris in the LECZ because of organized beach cleanups in the area. For over 30 years, Presque Isle State Park has been conducting beach cleanups in the spring and fall. Since 1988, the debris collected in the fall has been categorized and recorded for a national report published by the D.C.-based Center for Marine Conservation. So far, Pennsylvania is the only Great Lakes state to participate in the report.

Most of the trash collected on Presque Isle's beaches is paper and plastic (drinking straws, beverage cups, and utensils) and appears to be land-based. During the fall cleanup three years ago, more than 2,400 pounds of trash was picked up over the seven-mile beach area. In last year's cleanup, volunteers covered more than half of the beach area and collected only 742 pounds of trash. Park personnel credits the park's "adopt-a-beach" program, in which local organizations adopt a certain section of beach and clean it once a week or every other week, for the improvement.

The Erie County Department of Health inspects the shoreline east and west of Presque Isle State Park. East of the park, however, most of the shoreline is inaccessible by foot because of steep cliffs with no beach areas. West of Presque Isle, the shoreline has a considerable amount of human-made debris brought by lake waters. In some cases, though, property owners clean the beaches adjacent to their land. Most of the debris is plastic: bottles, balloons, and tampon applicators. The presence of tampon applicators indicates raw sewage contamination.

The Pennsylvania Department of Environmental Resources (DER) and the City of Erie have entered into a consent decree that calls for the city to eliminate all sources of pollution to Presque Isle Bay that originate in the city's sewer and water systems. The department's and city's goal: a swimmable bay in 20 years.

The USCG's Erie station told CZM staff that marine debris is not a problem in the lake or harbor.

Authorities

The USCG is responsible for preventing and cleaning up marine debris and responding to oil and gas spills and chemical releases. The USCG also retrieves floating barrels and, if chemicals are involved, attempts to determine the source. In addition, the USCG administers and enforces Annex V of the International Convention for the Prevention of Pollution from Ships (MARPOL). MARPOL states that garbage must not be discharged from any ships (all marine craft, including privately-owned recreational vessels) into navigable waters of the United States

or within the 200-mile exclusive economic zone. The COE, Philadelphia District, is involved with marine debris only as it affects the federal navigation channel. They remove sunken vessels and large debris items that are hazards to navigation and respond to emergency spills.

The Commonwealth of Pennsylvania enacted the "Municipal Waste Planning, Recycling and Waste Reduction Act" (Act 101) in July 1988. The goals of the act are to reduce the state's municipal waste generation, recycle at least 25 percent of waste generated, procure and use recycled and recyclable materials in state government agencies, and educate the public as to the benefits of recycling and waste reduction.

Municipalities with populations of at least 10,000 had to implement curbside recycling programs by September 26, 1990. Municipalities with populations between 5,000 and 10,000--and more than 300 persons per square mile--must have implemented curbside programs by September 26, 1991. Grants are available to all municipalities to establish recycling programs. All disposal facilities provide recycling drop-off centers. Mandated municipalities collect at least three of the following materials: clear glass, colored glass, plastics, aluminum, steel and bimetalic cans, high-grade office paper, corrugated paper, and newsprint.

The Commonwealth's litter statutes are addressed in civil and, most recently, criminal laws. The state Vehicle Code calls for a summary offense with fines from $10 to $300 (no minimum fine) and also specifies penalties ranging from eight to 80 hours of litter pick-up.

On May 31, 1990, Governor Casey signed House Bill 1068 which increases the penalties for litter and the scattering or dumping of trash. Specifics on littering under this criminal code law make it a summary offense with fines from $50 to $300 and/or imprisonment up to 90 days. Subsequent littering offenses are a third-degree misdemeanor with fines ranging from $300 to $1,000 and possible imprisonment and community service of up to one year. Under the "short-dumping" provisions of the law, for subsequent offenses, vehicles used to transport or dispose trash, garbage, or debris may be deemed contraband and forfeited.

The Pennsylvania Fish Commission littering rule prohibits any person from discarding or allowing the discarding of trash or garbage in or along any waters or on any lands adjacent or contiguous to waters or in such manner that the debris flows into or is carried by wind into such waters or lands.

The penalty for violating the Fish Commission rule ranges from a $25 fine to a fine of $100 or imprisonment not exceeding 90 days. Also, an additional penalty of $10 for each item of trash may be imposed on the person who violates this rule.

The Pennsylvania Game Commission fines litterers $50 plus $10 for each item. People who transport and dump garbage on game lands or private lands where hunting is allowed are fined $300 plus $10 for each item.

Neshaminy and Presque Isle State Park use the criminal and vehicle codes, state park rules and regulations, and fishing and boating laws to penalize litterers. The fines range from $10 to $300 plus court costs.

As required by the 1990 reauthorization of the Coastal Zone Management Act, CZM and DER's Bureau of Water Quality Management will develop a coastal nonpoint pollution program by November 1994. The new nonpoint program will identify land uses that threaten coastal waters and will also identify critical coastal areas that require additional management measures. Both state agencies will work closely with local governments and the public during implementation of the additional management measures.

Public Survey Responses

Public comment on marine debris focused on littering-dumping laws and control of pollution entering coastal waters (inland, point and nonpoint, and sewage plants). State, federal and local mechanisms are in place to address these issues and have been referred to in this assessment. The broad definition of marine debris prompted several comments on cleaning up superfund sites and landfills. However, addressing those specific point sources of pollution is beyond the scope of the enhancement objective for marine debris.

The public also suggested that CZM increase its public education and awareness efforts. This is addressed in the "Direction" section below.

Summary

In the DECZ, marine debris is mostly land-based from sewer overflows and littering. The volume and types of debris do not pose a threat to marine life or the environment. In the LECZ, marine debris is also land-based from sewer overflows and littering. The amount of debris on the shore is kept in check by organized cleanups, as well as informal cleanups by property owners.

Land-based debris is controlled and reduced through Pennsylvania's recycling and littering laws. The USCG and the COE control water-based debris. Sewage systems in the coastal communities have been or are being upgraded.

Direction

Based on this assessment, CZM does not anticipate making any program changes to address marine debris. However, CZM will continue its efforts to educate the public on the problem of marine debris. Those efforts shall include, but are not limited to, newsletter articles, promotional material and displays and working closely with other state and federal agencies to help control littering and dumping in coastal lands and waters.

Cumulative and Secondary Impacts Assessment

Legislative Objective

5309(a)(5) Development and adoption of procedures to assess, consider, and control cumulative and secondary impacts of coastal growth and development, including the collective effect on various individual uses or activities on coastal resources, such as coastal wetlands and fishery resources.

Assessment characterization

Characterize the nature, type, and extent of secondary and cumulative impacts in the coastal zone.

Introduction

Pennsylvania has chosen to address this issue area as a tool rather than an issue. In Pennsylvania's coastal zones (as evidenced elsewhere in this assessment document), cumulative and secondary impacts from coastal growth and development on most coastal resources can be addressed by improving the administration of regulatory programs designed to protect these resources. It is realized, however, that as growth continues to occur in the coastal zones, cumulative and secondary impacts could become a more pervasive problem. The one area where cumulative and secondary impacts are currently having identifiable negative effects is water quality.

Delaware Estuary Coastal Zone (DECZ)

The Delaware Estuary Program (DELEP), convened under the National Estuary Program, has identified nonpoint source pollution as a problem in the Delaware Estuary. The DELEP, in which the Pennsylvania Coastal Zone Management Program (CZM) is a major participant, is currently assessing the impacts of nonpoint source pollution on the estuary, identifying the sources of the pollution, and developing a program which includes controlling coastal growth and development to address the problems.

CZM will continue to participate actively in the DELEP and use its resources as appropriate to implement the DELEP nonpoint source control program in the Pennsylvania portion of the Delaware Estuary. This effort will be further reinforced under the Section 6217 requirements of the 1990 reauthorization of the Coastal Zone Management Act which requires CZM and the state water quality program to develop a nonpoint source program for its coastal waters. This effort, which will be integrated with the DELEP effort in the Delaware Estuary, will ensure that cumulative and secondary impacts of coastal growth and development on coastal resources are adequately addressed.

Lake Erie Coastal Zone (LECZ)

In the LECZ, nonpoint source pollution has not been identified as a major water quality problem. This was determined by a recent state Bureau of Water Quality Management assessment of Commonwealth waters. Additionally, development of the 6217 program for the LECZ will

identify and address any existing impacts that CZM is not aware of at this time.

Authorities

Most of Pennsylvania's key regulatory authorities address cumulative impacts in the assessment process. A good example of this is the state's PA Code, Title 25, Chapter 105 regulations which consider cumulative impacts to wetlands (see Wetlands Assessment). Existing/future harmful cumulative and secondary impacts to the Commonwealth's coastal resources are not/will not likely be from point/site specific activities that are addressed by regulations; but rather from nonpoint source/land use activities that are not easily addressable via regulatory programs. Therefore, the biggest cumulative and secondary impacts' issues are really land-use management issues. The following is a discussion of land-use authorities in the Commonwealth, which for the most part, reside at the local government level.

In Pennsylvania, the Municipalities Planning Code (Act of 1968, P.L. 805, No. 247, Reenacted and Amended December 21, 1988) provides the authority for most county and local planning in the coastal zones. The act empowers municipalities, with the exception of Philadelphia in the DECZ, to individually or jointly plan their development and to govern the same by zoning, ordinances, and state comprehensive plans-subdivision regulations. In Philadelphia, the Home Rule Charter of 1951 defines the powers and duties of the Planning Commission concerning land development and use. The Planning Commission acts in an advisory capacity to the City Council, the mayor, and the Zoning Hearing Board.

Act 247 provides the powers necessary for county and local planning. The planning agency "shall at the request of the governing body have the power and shall be required to: prepare a comprehensive plan; maintain and keep on file records of its action; make recommendations for adoption or amendment of an official map; prepare ... a municipal zoning ordinance; prepare, recommend, and administer subdivision and land development, and planned residential development regulations; prepare ... a municipal building code and a housing code; ... make such studies as may be necessary to fulfill the duties and obligations imposed by this act; prepare and present ... an environmental study; submit ... a recommended capital improvements program, prepare ... a water survey; promote public interest in ... the comprehensive plan and planning."

Act 247 also allows for public hearings, testimony, and municipal review of zoning ordinances and subdivision regulations to ensure consistency with the comprehensive plan. All of the local municipalities in the coastal zone are incorporated and, under state law, provide comprehensive plans, zoning ordinances, and subdivision regulations. Local governments do not usually delegate their land-use decision making authority. Counties, therefore, generally serve an advisory role and are limited in the direct control of land-use decisions.

The city of Philadelphia, both a municipality and a county, has a planning commission that is responsible for the orderly growth and development of the city. Under the 1951 Home Rule Charter, the powers

and duties of the commission include the preparation of: a comprehensive plan and its modifications, the capital program and budget, proposed zoning ordinances and amendments, and regulations concerning the subdivision of land.

The mechanisms for local land-use control, such as planning commissions and zoning boards, are in place and the majority of coastal communities have comprehensive plans. Despite apparent environmental interest, the problems are:

- In many instances, economic, rather than environmental concerns, are the driving force behind land-use decision making,
- Generally, environmental planning is not adequately integrated into all aspects of local planning, and
- Local resources (staffing and technical expertise) are generally inadequate to consider regional environmental protection and resource management needs, i.e., the regional environmental ramifications of local land-use decisions.

Generally, the planning process is influenced strongly by local decision makers responding to local interests. Although environmental and residents' interests are significant, these interests are generally not institutionalized into the land-use planning process. In many communities, developers, real estate interests, and industry are major players in the local decision-making process.

Concerning the issue of local capabilities to manage regional resources, in addition to the lack of a regional perspective on the value of coastal resources, institutions are not in place and local tools are deficient (staffing and technical expertise). Local governments have the legal authority to address likely CZM objectives. However, many do not possess the expertise or resources.

CZM has had success in addressing coastal issues by providing municipalities with money and/or technical assistance to develop new comprehensive plans, zoning ordinances, and subdivision regulations. Depending on the results of the 309 assessment of the various issue areas, this approach may again be useful. However, this approach, since it is voluntary, does not ensure that the proper plans, ordinances, and subdivisions will be developed and that implementation will occur.

Public Survey Responses

Public comment on this objective did not identify specific actions to be taken. In general, the comments reflected a desire for good land-use management plans for the coastal zones. Respondents believe it is important to have land-use plans in effect that protect resources, provide for public areas, and promote responsible economic growth.

Direction

Based on CZM's analysis and public comments received concerning this issue, it appears that wise land-use management is the key to minimizing cumulative and secondary impacts on coastal resources. The public in both coastal zones identified the need to have land-use planning that provided for access and protects important resources. Additionally, land-use management has been targeted as a key element in addressing nonpoint source pollution in the Delaware Estuary. CZM will make any necessary program changes to facilitate implementation of the DELEP land-use management effort. CZM will also continue its effort to promote wise land-use management in the coastal zones by providing local governments with funds to update their comprehensive plans and zoning ordinances. To make this effort more meaningful, CZM will review all of its GAPCs, new GAPCs will be identified to protect certain areas; i.e., important wetlands, critical habitats, potential access areas, etc., from cumulative and secondary impacts. Municipalities will be required to incorporate these GAPCs into their comp plans and zoning ordinances, and protect them from cumulative and secondary impacts from coastal developments. Since the only means we currently have to accomplish this is encouragement, i.e., the provision of CZM funds for planning and zoning updates, CZM will explore means to better insure that these critical areas (GAPCs) are protected by local land use decision making.

Special Area Management Planning Assessment

Legislative Objective

5309(a)(6) preparing and implementing special area management plans for important coastal areas.

Assessment characterization

Identify areas of the coastal zone subject to use conflicts that can be addressed through special area management planning.

Introduction

In identifying Special Area Management Planning (SAMP), the Coastal Zone Management Program (CZM) reviewed all of its "overlap" Geographic Areas of Particular Concern (areas where the distinction between a natural area, a recreational area, and a development opportunity area are not easily defined), consulted with CZM's regional coordinators (Delaware Valley Regional Planning Commission and Erie County Department of Planning), and sent questionnaires to the public.

Two areas of the coastal zone are identified as potential SAMPs: (1) siting dredge spoil disposal at Waste Management Incorporated-owned sites in the Delaware Estuary, and (2) determining the boating capacity at Erie's Presque Isle Bay. The boating capacity issue is a problem that CZM has been aware of for several years. The dredge disposal issue was recently brought to CZM's attention by the Department of Environmental Resources' (DER) Bureau of Water Projects.

Dredge Spoil Disposal Sites

DER is obligated to find dredge disposal sites for channel maintenance dredging performed by the U.S. Army Corps of Engineers in the Delaware River from Allegheny Avenue in Philadelphia north to the Trenton Marine Terminal. Dredging is necessary in this area to maintain adequate channel depth for commerce on the river. Based on economic and environmental concerns, hydraulic dredging is the only prudent and feasible way to keep the channel open.

Given the topographical and developmental constraints in the area, the only available sites for disposal are on lands currently owned or controlled by Waste Management Inc. (WMI). The majority of this area has been affected by past gravel extraction activities which have resulted in the creation of lakes. The lakes are used for private recreation and there are summer homes along some of them. There are several large active landfills in the area. In the past, dredge spoil disposal has been used as cover for the landfills; this could be a viable use for future spoil disposal as well.

DER is presently negotiating with WMI to acquire a ten-year lease for disposal sites on Money Island, Biles Island, and the area around the boat slip near Pennsbury Manor. Potential additional sites exist inland on WMI's property such as Van Sciver Lake and Scott's Creek.

If this area is designated as a SAMP, it would be managed to ensure that the area would be available for dredge spoil disposal on a long-term basis, while ensuring that the environmental and development potential of the area is not adversely impacted. This could be accomplished through acquisition, a long term lease, or a mutually developed and agreed upon management plan for the area.

Presque Isle Bay

Presque Isle Bay is a popular boating and recreational area. The 3,200-acre bay is surrounded by five miles of shoreline. A large part of that shoreline is associated with Presque Isle State Park which receives 4.5 to 5 million visitors annually. Presque Isle shelters the bay which is not subject to as many rough water episodes as the surrounding open lake waters. This is one of the reasons why the bay is so attractive to boaters.

In the past decades, the number of marinas has increased significantly. The bay currently has approximately 2,500 public and private slips, and demand still exists. Additionally, many boats are launched in the bay.

The City of Erie has voiced concern about boating capacity on the bay since the mid-1980s. The SAMP would determine the carrying capacity of the bay from environmental and social considerations i.e., how to limit the number of boats to that capacity, how to minimize environmental and social impacts caused by boating, and what other means exist for handling demand for boating in the area. Specific environmental considerations include impacts to water quality (sewage and gasoline from the boats), as well as impacts on wetlands and shorelines from wave action erosion.

All pertinent federal, state, and local agencies; clubs; and organizations would be involved in the development of the SAMP. The development of the SAMP would be closely coordinated with the development of a Remedial Action Plan for the bay's water quality which is currently being developed under the authority of DER.

Development of the SAMP would provide currently unknown information on the impact boating has on the bay's water quality which would be useful in the development of the Remedial Action Plan.

Public survey responses

Public comments were overwhelmingly positive on this issue. The public recognizes the need to find a long-term solution for disposal of the dredged material. The public also is solidly behind the clean up of Presque Isle Bay. Although the remedial action plan will be the primary vehicle for accomplishing this, the capacity study will ensure that the impact of boating on the Bay's water quality will be addressed. The public also recognizes the need to look at boating capacity from a social perspective, i.e., safety, and the impact of overcrowding on the enjoyment of boating on the bay.

Direction

CZM will meet with all pertinent agencies and publics to determine the parameters that should be included in looking at boater capacity on the bay. Following this determination, a Request for Proposal on a capacity study will be developed. The results of the study will be used to determine what new authority, regulations, actions, etc., need to be developed/taken to regulate boating on the bay.

CZM will identify all potential dredge spoil disposal sites in the affected area and then meet with property owners and the pertinent agencies to determine what actions need to be taken to secure a long-term solution to the problem of finding a place to dispose of channel dredging spoils.

The direction CZM takes will be determined by the results of the analysis that will determine the best management technique for the SAMPs. Regulatory/program changes developed to implement the SAMPs may include: new CZM policy on dredge disposal, new regulations governing development of marinas/pump-out stations in Presque Isle Bay, and regulations limiting the number of power boats in Presque Isle Bay.

Legislative Objective

5309(a)(8) Adoption of procedures and enforceable policies to help facilitate the siting of energy facilities and government facilities and energy-related activities and government activities which may be of greater than local significance.

Assessment Characterization

Assess existing planning, regulatory procedures, and policies which affect the siting of subject facilities and activities.

Introduction

For the purpose of this assessment, energy facilities and activities of regional benefit (greater than local concern) are defined as the production, generation, transmission, distribution, or supply of natural or artificial gas, electricity, or steam for the production of light, heat, or power to or for the public for compensation. Also included is the transportation or conveyance of natural or artificial gas, crude oil, gasoline, petroleum products, materials for refrigeration, oxygen, nitrogen, or other fluid substance by pipeline or conduit to the public for compensation.

Examples of government facility siting and activities of regional benefit include the Philadelphia and Erie International Airports, the Philadelphia Naval Base, and the U.S. Coast Guard stations.

Energy Facility Siting

On the state and local levels, strong planning processes exist to address the siting needs of energy facilities. As required by Section 305(b)(8) of the 1976 amendments to the Coastal Zone Management Act of 1972, Pennsylvania has specifically included in its Coastal Zone Management Program (CZM) a planning process for energy facilities likely to be located in or affecting the coastal zones. In fact, CZM, in conjunction with local governments, identified 16 Geographic Areas of Particular Concern (GAPC) that could be used as sites for future energy facilities. Each development opportunity GAPC has been selected because of the potential to "serve regional, state, or national economic interests."

CZM has encouragement and enforceable policies which specifically address energy facility siting and the planning process. The enforceable policies are based on state permit programs[1] which are networked into CZM. This permit process involves the issuance of permits for dams, hydropower projects, dredging, radiation, air

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[1] Pennsylvania Constitution, Article 1, Section 27; The Solid Waste Management Act, Act of July 31, 1968, P.L. 788, as amended
footnote continues next page

discharges, water discharges and withdrawals, solid waste disposal, shoreline erosion control, wetlands protection, and control of water obstructions and encroachments in the bed of Lake Erie and the Delaware River. These regulatory processes ensure that energy facilities are sited in such a manner that the coastal area ecosystems are not adversely affected. Numerous energy facility projects have been permitted thus far in the coastal zones. Examples include municipal and private trash-to-steam projects; natural gas to steam/electric; pier construction; maintenance for loading/unloading petroleum products; and underground pipelines for the conveyance of gas, oil, and other petroleum products.

The Pennsylvania Public Utility Commission (PUC) can override arbitrary local exclusion of energy facilities through the issuance of a "certificate of public convenience." These certificates are granted only after the PUC has determined that the energy facility is necessary for the service, accommodation, convenience, or safety of the public. The PUC reviews energy-related projects solely with state and/or regional interests in mind; not from a national interest standpoint. Once issued, no local jurisdiction may exclude such facilities from locating within its jurisdiction. The PUC certification process is also networked into CZM.[2]

It is important to note that a certificate of public convenience does not deprive the Department of Environmental Resources (DER) of any vested jurisdiction, powers, or duties which provide the department with separate and coequal project review authority.

Government Facility Siting

Although CZM does not specifically include a planning process to address government facility siting needs, sufficient state mechanisms networked into CZM already exist, or are being developed.

The state permitting process mentioned above, has already permitted several projects involving the Erie and Philadelphia International Airports, the Erie and Philadelphia Coast Guard Stations, and the Philadelphia Naval Base.

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continued footnote
(35 P.S. Section 6001 et seq.); The Air Pollution Control Act, Act of January 8, 1960, P.L. (1959) 2119, as amended (35 P.S. Sections 4001 et seq.); The Clean Streams Law, Act of June 22, 1937, P.L. 1987 (35 P.S. Sections 691.1 et seq.); The Dam Safety Act, Act of November 26, 1978, P.L. 1375, as amended (32 P.S. Sections 693.1 et seq.); Soil Conservation Law, Act of May 15, 1945, P.L. 547, as amended (3 P.S. Sections 849 et seq.); The Administrative Code, Act of April 9, 1929, P.L. 177, as amended (71 P.S. Section 510-20); Radiation Control, Act of January 28, 1966, P.L. (1965) 1625 (73 P.S. Sections 1301 et seq.); Act of July 1, 1978, P.L. 598 (66 PA C.S. Sections 1101 et seq.).

2 Act of October 24, 1970, Public Utilities Code (P.L. 707, No. 230), Pa. Consolidated Statutes, Title 66, Chapter 11.1 et seq.

CZM is establishing a direct contact review mechanism with pertinent federal agencies. It will replace the Commonwealth's Single Point of Contact (SPOC) clearinghouse, that was terminated by the Commonwealth in August of this year. Participation by federal agencies in the SPOC process was required by Presidential Executive Order 12372. CZM relied on the SPOC, which acted as a document distributor/comment collector for project reviewers and the federal agencies. In the future, CZM will receive from/respond directly to these federal agencies in the review of federal projects, including airport, Coast Guard, and defense facility projects. In addition, the Commonwealth has requested that these federal agencies establish direct contact review mechanisms with other state, regional, and local agencies.

To date, other than the discontinuance of the SPOC, no problems have been encountered that would affect the siting needs of government facilities of greater than local significance.

Project Review and Coordination

The Commonwealth and CZM have several project review and coordination processes that minimize duplication and enhance communication between permitting authorities and those requesting permits. They are:

A. State permitting process. All applications for state permits are published in the Pennsylvania Bulletin to ensure ample public notice is provided to all concerned parties. In addition, the internal DER "Form 1" process ensures that when an application for one permit is submitted, the applicant is made aware of other state permit requirements. Intra-agency coordination and coordination with the applicant begin at this time.

B. The establishment of direct contact review. This review and coordination mechanism mentioned above, will ensure that all federal development and assistance projects are coordinated with at the state, local, and regional levels.

C. CZM Urban Waterfront Action Group (UWAG). CZM has developed and funds this prepermit meeting process. This group, composed of federal, state, regional, and local permitting agencies; has already reviewed several energy and government facility-type projects. Also in the Lake Erie coastal zone, similar group meetings are held on an as-needed basis.

D. CZM federal consistency review procedures. These procedures ensure that prior to determining consistency, the project is introduced into the state permitting process (see A above) and all state permits have been received.

These project-review and permitting procedures are very effective in that the previously cited Coast Guard, airport, and energy facilities were all reviewed through these procedures with no problems encountered.

Public Participation

On the state level, the siting of energy and government facilities is open to all public and private interests. Opportunities for involvement are made available by the PUC prior to, during, and after issuance of their certificate. The PUC holds public hearings and investigations, and publishes public notices requesting protests or petitions to intervene. Additional opportunities are available during the review of state permit applications and after permit issuance through the Environmental Hearing Board appeals process.

In addition to the mechanisms traditionally available to the public, (i.e., state permit review) CZM provides other avenues for participation through the local Coastal Zone Steering Committees (CZSC) and the Coastal Zone Advisory Committee.

Citizen and interest groups may make their views on issues known by attending local CZSC meetings, contacting their representatives on the steering committees, or contacting CZM directly.

Public Survey Responses

CZM received very few comments (13 total) on this legislative objective. Of these respondents, five felt that CZM's assessment adequately addressed this issue and agreed with the proposed direction. However, two respondents felt that CZM should adopt procedures and enforceable policies for this objective, citing the need for "future protection" and "because of air, land, and water effects beyond our borders."

Two other respondents opined that enforcement is weak, and that federal agencies disregard state and local permitting requirements and fail to comply with state and local regulations. Two respondents felt that there should be no development along the Lake Erie shoreline. One suggested that "no development should occur within five miles of any shoreline" while the other felt that nuclear development should not be located anywhere near the Great Lakes.

Summary

Within Pennsylvania there exists more than adequate procedures and planning processes for considering the needs of energy related and government facilities and activities.

CZM, in conjunction with local municipalities, has identified 16 sites which could be used in siting future energy facilities. In addition, CZM has several specific policies related to siting energy facilities, while the PUC's "certificate of public convenience" can override arbitrary local exclusion of energy facilities.

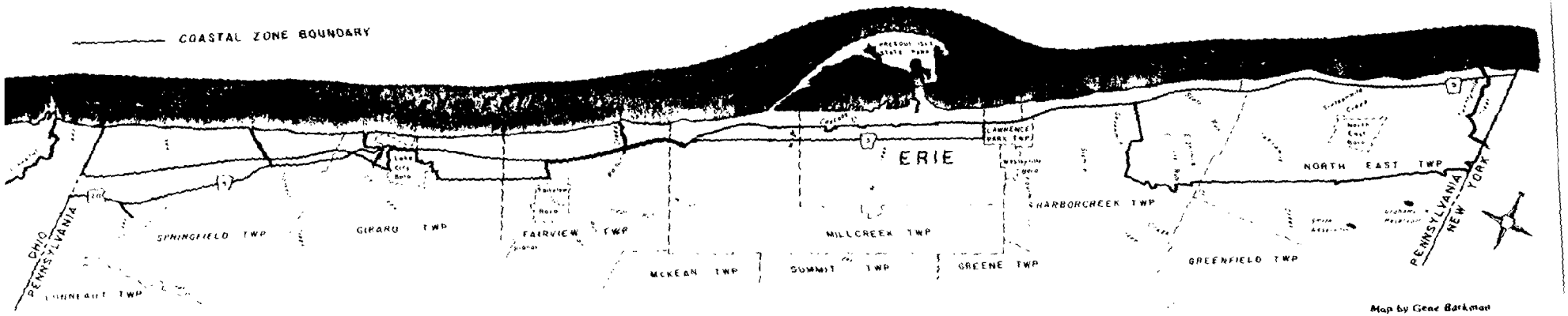
Although CZM does not specifically include a planning process or policies to address government facility siting needs, the state's permitting process, the direct review mechanism, CZM's federal consistency review procedures, and the CZM-funded UWAG prepermit forum provide for adequate siting consideration. These processes/procedures/forum are also used in siting energy facilities and activities.

Since CZM was approved in 1980, numerous energy and government facilities/activities have been undertaken with no problems encountered. This conclusion is supported in part by the limited response to CZM's public opinion survey. Those few concerns raised are addressed via the existing permit/project review mechanisms in place.

Direction

Based on this assessment and limited public comments, CZM will not revise its policies concerning energy and government facility siting and activities. CZM believes that the concerns raised in the public survey are addressed by the existing CZM policies and existing state coordination and review mechanisms.

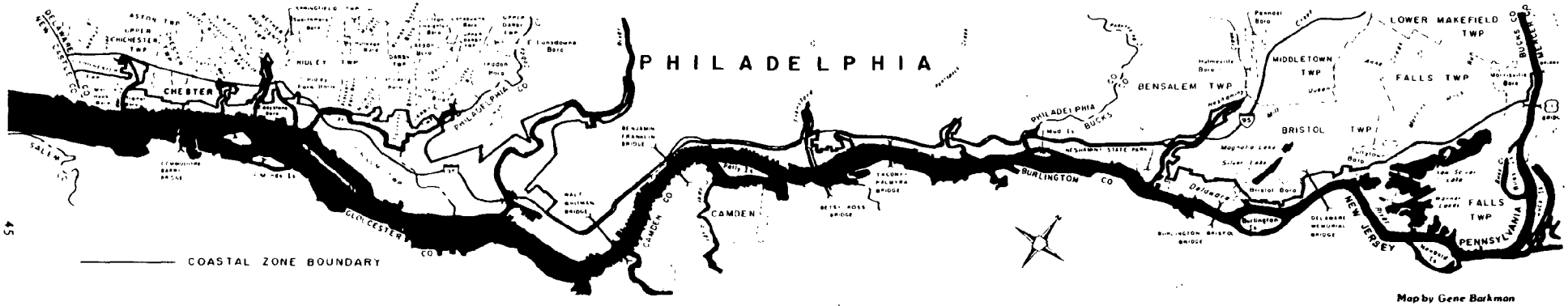
Lake Erie Coastal Zone



Map by Gene Barkman

Note: In accordance with a 1976 ruling of the U.S. Department of Justice, all lands owned, leased, held in trust or which use is otherwise, by law, subject solely to the discretion of the federal government, are excluded from the coastal zone. Federal agencies must still comply with the consistency provisions of the federal act when actions on these excluded lands directly affect coastal zone areas, uses or resources.

Delaware Estuary Coastal Zone



Map by Gene Barkman

Note: In accordance with a 1976 ruling of the U S Department of Justice, all lands owned, leased, held in trust or which use is otherwise, by law, subject solely to the discretion of the federal government, are excluded from the coastal zone Federal agencies must still comply with the consistency provisions of the federal act when actions on these excluded lands directly affect coastal zone areas, uses or resources